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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/848,411

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Daniel R. Jeske

Jeske 6-11/2925-0555P

7710

7590

07/15/2005

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EXAMINER

PERILLA, JASON M

ART UNIT

PAPER NUMBER

2638

DATE MAILED: 07/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/848,411

**Applicant(s)**

JESKE ET AL.

**Examiner**

Jason M. Perilla

**Art Unit**

2638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-17 is/are allowed.
- 6) ☒ Claim(s) 18 is/are rejected.
- 7) ☒ Claim(s) 19-24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Claims 1-24 are pending in the instant application.

#### ***Response to Amendment/Argument***

2. In view of the amendments to the claims filed April 29, 2005, the claims objections set forth in the first office action dated February 8, 2005 have been withdrawn.

3. The Applicant's arguments against the prior art rejection of claim 18 under 35 U.S.C. §102(e) as being anticipated by Buehrer et al (US 6614857; hereafter "Buehrer") has been considered, but it is not persuasive. The applicant contests that Buehrer fails to disclose combining the first and second SINR estimates to produce a composite SINR estimate. Further, the Applicant argues that the instant application claims a method of estimating a signal-to-interference+noise ratio rather than a signal-to-noise ratio as disclosed by Buehrer. However, the Examiner insists that all of limitations of the claim are disclosed by Buehrer as set forth in the first office action. Buehrer discloses (col. 4, lines 48-56):

One approach to setting  $\delta$  is to use a value of  $\delta$  which reflects the SNR of the two signals used for estimation, i.e.,

$$\delta = \frac{\gamma_p}{\gamma_p + \gamma_s} \quad (\text{C})$$

where  $\gamma_p$  is the SNR of the pilot signal (A) and  $\gamma_s$  is the SNR of the data (B).

Therefore, according to Buehrer, both a first SINR estimate (A) is generated based on pilot samples and a second SINR estimate (B) is generated based on data samples. Further, as broadly as claimed, the first and second estimates are

Art Unit: 2638

"combined" according to the equation (C). That is,  $\delta$  represents the combination of the first and second SINR estimates. Indeed, as broadly as claimed, the ratio of the first and second SINR estimates of Buehrer described by equation (C) represents a combination of them.

Further, the signal-to-noise ratios of the pilot signal and data signal of Buehrer are considered to be equivalent to the signal-to-interference+noise ratios of claim 18 because the "interference" is not specified as having a particular form. That is, the signal-to-noise ratios of Buehrer, as understood by one in the art, include noise from all sources. The "noise" in the general "signal-to-noise ratio" described by Buehrer is appropriately interpreted to encompass white, Gaussian, or ambient noise as well as any noise from interfering frequencies and signals. The "noise" of Buehrer is considered to be anything other than the signal. Therefore, it encompasses "noise" and "interference" as broadly as claimed.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 18 is rejected under 35 U.S.C. 102(e) as being anticipated by Buehrer et al (US 6614857; hereafter "Buehrer").

Regarding claim 18, Buehrer discloses a method of estimating a signal-to-interference+noise ratio (SINR), comprising: generating a first SINR or SNR estimate ( $\gamma_p$ ) based on received pilot symbol samples (col. 4, lines 54-56); generating a second SINR estimate ( $\gamma_s$ ) based on received data symbol samples (col. 4, lines 54-56); and combining the first and second SINR estimates to produce a composite SINR estimate (col. 4, line 50; equation 7). The generation of the SNR of the pilot signal and the SNR of the data signal is certain because the values are known by the method of Buehrer, and, as broadly as claimed, the combining result ( $\delta$ ) is disclosed in equation 7 as the division of the pilot SNR by the sum of the pilot SNR and the data SNR.

#### ***Allowable Subject Matter***

6. Claims 1-17 are indicated to contain allowable subject matter in view of the prior art of record.

7. Claims 19-24 are objected to as being dependent upon a rejected base claim, but would be allowable in view of the prior art of record if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Perilla whose telephone number is (571) 272-3055. The examiner can normally be reached on M-F 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vanderpuye Kenneth can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 09/848,411

Page 6

Art Unit: 2638



Jason M. Perilla

June 27, 2005

jmp



CHIEH M. FAN  
PRIMARY EXAMINER